I CLAIM:

1. A catalyst comprising nickel in a reduced valence state on a carrier comprising zinc oxide and alumina, wherein the Zn:Ni atomic ratio is at least 12, and the catalyst is prepared by:
- mixing zinc oxide in the form of a powder and alumina or an alumina precursor in the form of a powder thereby providing a powder mixture;
- peptising the powder mixture and forming an extrudable dough by adding acid and water to the powder mixture in such amounts that the dough contains 0.8-1.2 moles acid equivalents per kg powder thereby providing an extrudable dough;
- extruding the extrudable dough to form extrudates;
- drying and calcining the extrudates;
- impregnating said calcined extrudates with an aqueous solution of a nickel compound thereby providing an impregnated extrudate;
- drying, calcining and reducing the impregnated extrudates.

2. The catalyst of claim 1 wherein the acid is nitric acid, citric acid or acetic acid.

3. The catalyst of claim 1 wherein the aqueous solution of the nickel compound is an ammoniacal solution of a nickel salt.

4. The catalyst of claim 2 wherein the aqueous solution of the nickel compound is an ammoniacal solution of a nickel salt.

5. The catalyst of claim 1 wherein the carrier comprises zinc oxide and alumina.

6. The catalyst of claim 3 wherein the carrier comprises zinc oxide and alumina.

7. The catalyst of claim 1 wherein the Zn:Ni atomic ratio is at least 15, and wherein the Zn:Ni atomic ratio is at most 75.

8. The catalyst of claim 1 wherein the Zn:Ni atomic ratio is at least 20, and wherein the Zn:Ni atomic ratio is at most 75.

9. The catalyst of claim 1 wherein the Zn:Ni atomic ratio is at least 15, and wherein the Zn:Ni atomic ratio is at most 30.

10. The catalyst of claim 1 wherein the carrier comprises at most 20 weight% alumina.

11. The catalyst of claim 3 wherein the carrier comprises at most 20 weight% alumina.

12. The catalyst of claim 5 wherein the carrier comprises at most 20 weight% alumina.

13. The catalyst of claim 7 wherein the carrier comprises at most 20 weight% alumina.

14. The catalyst of claim 1 wherein the carrier comprises from 5 to 15 weight% alumina.

15. The catalyst of claim 1 having a strength of at least 80 N/cm.

16. The catalyst of claim 10 having a strength of at least 80 N/cm.

17. The catalyst of claim 1 having a strength of at least 100 N/cm.

18. The catalyst of claim 1 wherein the nickel concentration is in the range of from about 0.5 to about 5 wt% based on the total weight of carrier.

19. The catalyst of claim 3 wherein the nickel concentration is in the range of from about 0.5 to about 5 wt% based on the total weight of carrier.

20. The catalyst of claim 1 wherein the nickel concentration is in the range of from 1 to 4 wt% based on the total weight of carrier.

21. The catalyst of claim 1 having a nickel dispersion of at least 20%.

22. The catalyst of claim 3 having a nickel dispersion of at least 20%.

23. The catalyst of claim 10 having a nickel dispersion of at least 20%.

24. The catalyst of claim 15 having a nickel dispersion of at least 20%.

25. The catalyst of claim 1 having a nickel dispersion of at least 30%.

26. The catalyst of claim 21 having a nickel dispersion of at least 30%.

27. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 1 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

28. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 3 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

29. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 5 in the presence of hydrogen, at a temperature in the

range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

30. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 7 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

31. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 10 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

32. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 15 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

33. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting

the feedstock with the catalyst according to claim 18 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

34. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 21 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from about 0.1 to about 50 kg feedstock/litre catalyst/h.

35. A process for desulphurisation of a hydrocarbonaceous feedstock, comprising contacting the feedstock with the catalyst according to claim 1 in the presence of hydrogen, at a temperature in the range of from about 150 to about 500 °C, a pressure in the range of from about 1 to about 50 bar (absolute), and a liquid velocity in the range of from 0.1 to 10 kg feedstock/litre catalyst/h.